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SHORT REPORT

Endovascular Management of Pseudoaneurysm Caused by Total Hip Arthroplasty. A Case Report

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Introduction

Vascular injuries are a well recognsied complication of total hip arthroplasty. The early recognition and treatment of these injuries is vital to the successful management of these patients. We describe the successful treatment of a false aneurysm following surgery using an embolisation coil.

Case Report

A 78-year-old man underwent hip arthroplasty on the right side for osteoarthritis with protrusio acetabuli causing limitation of movement. The surgery was performed using a lateral incision. The neck was resected and the head excised. Osteophytes in the postero-inferior aspect of the acetabulum were trimmed using osteotomes. During this procedure the medial circumflex femoral artery was damaged, causing excessive blood loss of three litres. This was controlled using over-sewing with a vicryl stitch. A Charnley hip prosthesis was positioned, the wound was irrigated using pulse lavage, a collatamp sponge was placed inferiorly at the site of bleeding and the wound closed in layers over one suction drain with clips to the skin.

He had swelling and discolouration in the thigh region after 1 week and a doppler ultrasound did not show any evidence of DVT. Due to persistent swelling and increasing pain in the groin 2 weeks after the surgery a venogram was performed to exclude isolated femoral DVT. The venogram was normal. An ultrasound performed next day revealed a large adductor compartment haematoma with a 5 cm hypoechoic area in the upper thigh. This was thought to be a false aneurysm and a contrast enhanced CT

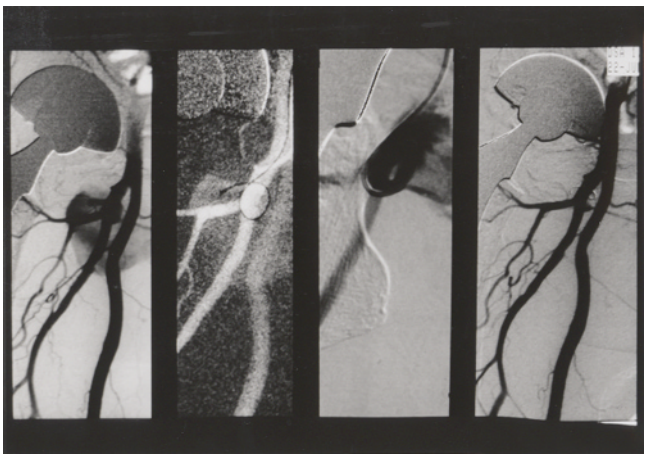

Fig. 1. Series of a digital subtraction angiogram demonstrating a branch of the right profunda femoris artery to be severed and filling the false aneurysm (small arrowhead). This branch artery was selected and catheterized with the help of a terumo guide wire. A 3 mm × 10 mm coil (large arrowhead) was placed in the artery and satisfactory heamostasis achieved following embolisation.

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confirmed this. Under roadmap, a 4 French glide catheter (Terumo) was used from the contralateral approach. An angiogram demonstrated the medial circumflex femoral artery (a branch of the right profunda femoris artery) to be severed and filling the false aneurysm. This branch artery was selected and catheterised with the help of a Terumo guide wire. A 3 mm × 10 mm coil was placed in the artery and satisfactory haemostasis achieved following embolisation. The patient had made good recovery from the procedure at six month follow-up.

Discussion

Total hip arthroplasty is a common procedure performed on the elderly population. The incidence of coexistent atherosclerotic disease in this population places them at particular risk of vascular injuries during surgery. The potential mechanisms involved in these vascular injuries are many.[1,2] The common femoral artery, which lies directly anterior and medial to the hip joint, can be injured by the use of retractors. The medial and lateral circumflex femoral arteries are also susceptible to injury from injudicious placement of retractors. Drilling and reaming manoeuvers and cement extrusion through the acetabular walls can injure the external iliac vessels causing perforation and pseudoaneurysm formation.[3] The removal of cement during revision surgery can also lead to inadvertent avulsion of the blood vessels. Surgical repair of these vascular injuries involves debridement and reconstruction by primary mobilisation with end to end anastomosis or graft interposition.

The endovascular treatment of vascular injuries has been described and been shown to be a safe option.[4] This is clearly an important treatment option in the elderly population after hip replacement as it reduces the mortality and morbidity from operative surgery for such complications. Our case clearly demonstrates that endovascular coil placement is a safe and relatively easy procedure for occluding pseudoaneurysms.

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